



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

11/19

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,565	06/26/2003	Nambirajan Seshadri	14169US02	4707
23446	7590	12/28/2007	EXAMINER	
MCANDREWS HELD & MALLOY, LTD			BURROWES, LAWRENCE J	
500 WEST MADISON STREET				
SUITE 3400			ART UNIT	PAPER NUMBER
CHICAGO, IL 60661			2619	
MAIL DATE		DELIVERY MODE		
12/28/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/606,565	SESHADRI ET AL.
	Examiner	Art Unit
	LAWRENCE J. BURROWES	2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 30 November 2007.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) 1-30 is/are allowed.
 6) Claim(s) 1-30 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 November 2007 has been entered.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-4, 8-14, 18-24 and 28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi et al (6,947,768) hereafter Adachi, in view of Ishikawa et al (5,640,678), and in further view of Holmring (6,216,002).

For claims 1, 11 and 21, Adachi teaches facilitating communication in a mesh network (see column 35 lines 45-50) using a plurality of wireless access points (see Figure 12, STA21 and STA22), the method comprising: coupling a first wireless access point located in a first cell of the mesh network (see Figure 1, AP1 is located in First BSS) to at least a second wireless access point located in a neighboring second cell of the mesh network (see Figure 1, AP2 is located in Second BSS); providing service initially to at least one of a plurality of access devices by the at least a first wireless access point located in the first cell in the mesh network (see Figure 1, STA11).

Adachi teaches all of the subject matter of the claimed invention except servicing the at least one of a plurality of access devices by the at least a second wireless access point located in the second cell whenever a signal for the at least one of a plurality of access devices falls below the specified threshold;

Ishikawa from the same or similar fields of endeavor teaches servicing within the mesh network, said at least one of a plurality of access devices by the at least a second wireless access point located in the second cell whenever a signal for the at least one of a plurality of access devices falls below a specified threshold (see column 7 lines 1-59).

Adachi, in view of Ishikawa teaches all of the subject matter of the claimed invention except wherein the at least one of the plurality of access devices maintains a handoff candidate list and wherein the second wireless access point is selected from the handoff candidate list.

Holmring from the same or similar fields of endeavor teaches wherein the at least one of the plurality of access devices maintains a handoff candidate list (see column 3 lines 22-41, the mobile has a handover candidate list) and wherein the second wireless access point is selected from the handoff candidate list (see column 3 lines 22-41; the list can be used to determine the optimal base station from the parameters in the list to handoff to).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/implement handoff candidate list of Holmring and the threshold measuring system of Ishikawa into the wireless communication system of Adachi by connecting the threshold monitoring circuit into the wireless access points and mobile stations and programming the mobile with a handoff candidate list. The motivation for doing so would be to increase efficiency of the system by reducing the message traffic among the components of the wireless network.

Regarding claims 2, 12 and 22, comprising coupling the first wireless access point located in a first cell to at least a third wireless access point located in the

first cell (see Adachi column 4 lines 16-33, since there is a plurality of base stations any of the other base stations can be the third wireless access point).

Regarding claims 3, 13 and 23, transmitting a first signal (see Adachi Figure 14, S305, AP2 sending request frame to AP1) from a first beamforming antenna (see Adachi Figure 17 Box 25, adaptive array antennas are in both wireless access points) coupled to the first wireless access point, to the at least a second wireless access point (see Adachi Figure 12, the base stations have a beam that is transmitted between them).

Regarding claims 4, 14 and 24, transmitting a second signal (see Adachi Figure 14, S306, AP1 sending request frame to AP2) from a second beamforming antenna (see Adachi Figure 17 Box 25, adaptive array antennas are in both wireless access points) coupled to the second wireless access point, to the at least a first wireless access point (see Adachi Figure 12, the base stations have a beam that is transmitted between them).

Regarding claims 8, 18 and 28, comprising coupling the first access point located in a first cell to at least a third access point located in the first cell (see column 4 lines 16-33, since there is a plurality of base stations any of the other base stations can be the third access point).

Regarding claims 9, 19 and 29, servicing the at least one of a plurality of access devices by the at least a third wireless access point located in the first cell whenever a signal for the at least one of a plurality of access devices falls below

the specified threshold (see Ishikawa column 7 lines 1-59, as explained above the third wireless access point can be any base station).

Regarding claims 10, 20 and 30, wherein at least one of the first wireless access point and the at least one of a plurality of access devices determines when the signal for the at least one of a plurality of access devices falls below the specified threshold (see Ishikawa column 7 lines 1-59).

4. Claims 5-7, 15-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Adachi, in view of Ishikawa, in view of Holmring, and in further in view of Matthews et al (PGPUB 2002/0077151) hereafter Matthews.

For claims 5, 15 and 25, Adachi, in view of Ishikawa, in view of Holmring, disclose all the limitations of the claimed invention except wherein a path for facilitating the transmitting the first signal between the first beamforming antenna and the second beamforming antenna is an uplink channel.

Matthews from the same or similar fields of endeavor teaches wherein a path for facilitating the transmitting the first signal between the first beamforming antenna and the second beamforming antenna is an uplink channel (see paragraph 67 lines 1-9); wherein a path for facilitating the transmitting of the second signal between the second beamforming antenna and the first beamforming antenna is a downlink channel (see paragraph 67 lines 1-9); and wherein the uplink channel and the downlink channel comprise a backhaul channel (see paragraph 33 lines 1-19).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify/implement the transmission channels of Matthews into the combined wireless communication system of Adachi, in view of Ishikawa by programming the system to send in either direction with the antenna array. The motivation for doing so would be so that the separated channels could be configured to use different transmission powers depending on the distance of the base stations and to limit the amount of extra beacons if only one base station want to communicate.

Regarding claims 6, 16 and 26, wherein a path for facilitating the transmitting of the second signal between the second beamforming antenna and the first beamforming antenna is a downlink channel

Regarding claims 7, 17 and 27, wherein the uplink channel and the downlink channel comprise a backhaul channel.

Response to Arguments

5. Applicant's arguments, see pages 13-15, filed 30 November 2007, with respect to 101 rejections have been fully considered and are persuasive. The 101 rejections of claims 11-20 have been withdrawn.
6. Applicant's arguments, see pages 15-17, filed 30 November 2007, with respect to the rejection(s) of claim(s) 1, 11 and 21 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of Holmring.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Moore et al (6075989) and Garncarz et al(5640676).

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE J. BURROWES whose telephone number is (571) 270-1419. The examiner can normally be reached on Monday - Thursday 5:30am - 2pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan D. Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LJB


EDAN ORGAD
SUPERVISORY PATENT EXAMINER

